d

Direction of
Vehicle Travel

Loop

P1

P2

**Figure 1**

**LEGEND**

P1    Piezoelectric Sensor 1

P2    Piezoelectric Sensor 2

Loop   Inductive Loop

T1    Time when Front Axle triggers P1

T2    Time when Front Axle triggers P2

T3    Time when Rear Axle triggers P1

T3    Time when Rear Axle triggers P2

$\Delta ts^1$    Time Interval used to measure the Speed of the Front Axle (T2-T1)

$\Delta ts^2$    Time Interval used to measure the Speed of the Rear Axle (T4-T3)

$\Delta twb$   Time Interval used to measure the Wheel Base (T3-T2)

$cs^1$    Count Speed 1 is the Number of Interval Counts between T2 and T1 ($\Delta ts^1$*freq)

$cs^2$    Count Speed 2 is the Number of Intervals Counts between T4 and T3 ($\Delta ts^2$*freq)

cswb   Count Speed Wheel Base is the Number of Interval Counts between T3 and T2 ($\Delta twb$*freq)

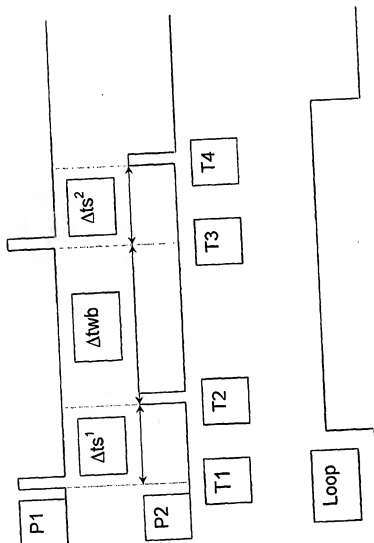freq   Reference Crystal Frequency

d    Distance separating P1 and P2



**Figure 2**